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EXAMINER	
WITKOWSKI, ALEXANDER C	
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4193	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,454	GYDESEN, ERIK	
	Examiner	Art Unit	
	ALEXANDER C. WITKOWSKI	4193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2006*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-13 and 15-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-13 and 15-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/01/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 3, 8, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimohatsubo et al. (US 6,024,016) in view of Kersch et al. (US 6,755,130).

With respect to claim 1, Shimohatsubo et al. teaches **a method for cleaning the ink chamber** (Fig.3; col.3, lines 49-52) **of a printing unit** (col.1, lines 41-44) **preferably a chamber in a doctor blade** (Fig.2: 26) **where pressurized cleaning liquid** (col.4, lines 52-53) **is sprayed into the chamber through at least one cleaning nozzle** (Fig.2; 21).

However, Shimohatsubo et al. does not teach **partial filling of a hydrophore with liquid from a storage tank, a supply system or a water tap by means of a high-pressure pump, building up a predetermined pressure in the hydrophore, activation of at least one valve which is disposed between the hydrophore and the cleaning nozzle for injecting at least one shot of cleaning liquid in the ink**

chamber for executing a cleaning cycle controlled by the activation cycle of the valves.

Kersch et al. teaches **partial filling of a hydrophore with liquid from a storage tank** (Fig.1: 1)**, a supply system** (Fig.1: 14) **or a water tap by means of a high-pressure pump** (Fig.1: 14)**, building up a predetermined pressure in the hydrophore** (Fig.1: showing hydropneumatic cleaning system; Applicants' hydrophore seems to function as a hydropneumatic pressure system)**, activation of at least one valve** (Fig.1: 5) **which is disposed between the hydrophore and the cleaning nozzle** (Fig.1: 5) **for injecting at least one shot of cleaning liquid in the ink chamber for executing a cleaning cycle** (col.4, lines 5-22) **controlled by the activation cycle of the valves** (Fig.1: 30; col.4, lines 23-41)**.**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shimohatsubo et al. to provide partial filling of a hydrophore with liquid from a storage tank, a supply system or a water tap by means of a high-pressure pump, building up a predetermined pressure in the hydrophore, activation of at least one valve which is disposed between the hydrophore and the cleaning nozzle for injecting at least one shot of cleaning liquid in the ink chamber for executing a cleaning cycle controlled by the activation cycle of the valves, as taught by Kersch et al., for the purpose of reducing consumption of ink cleaning agents and associated costs (col.1, lines 33-36).

With respect to claim 2, the combination of Shimohatsubo et al. and Kersch et al. references, as applied to claim 1, teaches **a method characterized by filling a storage tank with cleaning liquid** (Shimohatsubo et al.: col.4, lines 52-53) **and transferring a volume of cleaning liquid from the storage tank for filling the hydrophore** (Kersch et al.: Fig.1)**, where each cleaning cycle** (col.4, lines 5-22) **includes a number of shots with an interval of 5 - 15 seconds, preferably about 10 seconds** (choice of design)**.**

With respect to claim 3, the combination of Shimohatsubo et al. and Kersch et al. references, as applied to claim 1, teaches **a method characterized in that the hydrophore** (Kersch et al.: Fig.1) **and the ink chamber** (Shimohatsubo et al.: Fig.3; col.3, lines 49-52) **are blown through** (col.4, lines 48-58) **for driving out cleaning liquid** (col.4, lines 52-53) **at the termination of a cleaning cycle** (col.4, lines 48-58)**.**

With respect to claim 8, the combination of Shimohatsubo et al. and Kersch et al. references teaches **a system for cleaning an ink chamber** (Shimohatsubo et al.: Fig.3; col.3, lines 49-52) **of a printing unit** (col.1, lines 41-44)**, preferably a chamber in a doctor blade** (Fig.2: 26)**, including at least one cleaning nozzle** (Fig.2; 21) **through which pressurized cleaning liquid** (col.4, lines 52-53) **is sprayed into the chamber, characterized in that it includes a hydrophore** (Kersch et al.: Fig.1) **connected with a storage tank** (Fig.1: 1)**, supply system** (Fig.1: 14) **or a water tap via a high-pressure pump** (Fig.1: 14) **for transferring a volume of cleaning liquid**

for partly filling the hydrophore for building up a predetermined pressure in the hydrophore (Fig.1)**, at least one activatable valve** (Fig.1: 5) **disposed in a connection between the hydrophore and the cleaning nozzle, and which is adapted for opening the connection for injecting a shot of cleaning liquid into the ink chamber, and which is connected with a control for executing a cleaning cycle** (col.4, lines 5-22) **controlled by the activation cycle of the valves** (Fig.1: 30; col.4, lines 23-41)**.**

With respect to claim 9, the combination of Shimohatsubo et al. and Kersch et al. references, as applied to claim 8, teaches **a system characterized in that the hydrophore** (Kersch et al.: Fig.1) **is connected with a source of pressurized air** (Fig.1: 14, 15)**, preferably a standard pressurized air facility, so that the hydrophore and the ink chamber** (Fig.3) **may be blown through for driving out cleaning liquid at the termination of a cleaning cycle** (col.4, lines 5-22)**.**

With respect to claim 12, the combination of Shimohatsubo et al. and Kersch et al. references, as applied to claim 8 above, teaches **a system characterized in that a number of inlets and outlets are provided in the chamber** (Kersch et al.: Fig.1: 3)**, the inlets and outlets being distributed along the length of the chamber** (Fig.1: 3)**, as a row of inlets are disposed at one side of the chamber** (Fig.6: 3) **while a row of outlets are disposed at the opposite side of the chamber** (Fig.6: 3)**, that the row of inlets are connected with a common ink supply** (Fig.6: 3)**, and that the row of**

outlets are connected with a common outlet for ink (Fig.3: outlet pipe)**.**

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimohatsubo et al. (US 6,024,016) and Kersch et al. (US 6,755,130), as applied to claim 1 above, and further in view of Yamaguchi et al. (US 6,623,564).

With respect to claim 4, the combination of Shimohatsubo et al. and Kersch et al. references, as applied to claim 1, teaches **a method characterized in that the cleaning liquid is heated, possibly in the storage tank, before filling into the hydrophore** (Kersch et al.: Fig.1)**, and that the hydrophore is emptied at each cleaning cycle** (col.4, lines 23-41) **is only re-filled with heated** (Yamaguchi et al.: col.7, lines 1-5) **cleaning liquid immediately before a new cleaning cycle** (col.4, lines 5-23)**.**

However, the combination of Shimohatsubo et al. and Kersch et al. references, does not teach that **the hydrophore is only re-filled with heated cleaning liquid.**

Yamaguchi et al. teaches **the hydrophore is only re-filled with heated** (Yamaguchi et al.: col.7, lines 1-5) **cleaning liquid.**

It would have been obvious to one of ordinary skill in the art at the time of this invention to modify the combination of Shimohatsubo et al. and Kersch et al. references to provide that the hydrophore is only re-filled with heated cleaning liquid, as taught by Yamaguchi et al., for the purpose of removing residual ink with greater effectiveness and speed, thus reducing time between printing cycles.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimohatsubo et al. (US 6,024,016) and Kersch et al. (US 6,755,130), as applied to claim 1 above, and further in view of Steenbergen (US 6,602,566).

With respect to claim 5, the combination of Shimohatsubo et al. and Kersch et al. references teaches all the limitations of claim 1. However, the combination of Shimohatsubo et al. and Kersch et al. references does not teach **a method characterized in that the predetermined pressure in the hydrophore is between 3 and 30 bar, preferably between 12 and 20 bar and particularly about 16 bar.**

Steenberger teaches **a method characterized in that the predetermined pressure in the hydrophore is between 3 and 30 bar, preferably between 12 and 20 bar and particularly about 16 bar** (Steenbergen: col.2, lines 62-63: disclosing ink cleaning at 15 bar)**.**

It would have been obvious to one of ordinary skill in the art at the time that this invention was made to modify the combination of Shimohatsubo et al. and Kersch et al. references to provide a method characterized in that the predetermined pressure in the hydrophore is between 3 and 30 bar, preferably between 12 and 20 bar and particularly about 16 bar, as taught by Steenbergen, for the purpose of removing residual ink with greater effectiveness and speed, thus reducing time between printing cycles.

5. Claims 6, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimohatsubo et al. (US 6,024,016) and Kersch et al. (US 6,755,130), as applied to claims 1 and 8 above, and further in view of Figliola et al. (US 3,662,781).

With respect to claim 6, the combination of Shimohatsubo et al. and Kersch et al. references teaches all the limitations of claim 1 above.

Figliola et al. teaches a **method characterized in that each cleaning nozzle is spring biased towards a closed position, where it covers injection openings in the chamber, and that the pressure in the cleaning liquid overcomes the spring biasing by an injection shot** (col.4, lines 8-13)**.**

It would have been obvious to one of ordinary skill in the art at the time of this invention to modify the combination of Shimohatsubo et al. and Kersch et al. references to provide a method characterized in that each cleaning nozzle is spring biased towards a closed position, where it covers injection openings in the chamber, and that the pressure in the cleaning liquid overcomes the spring biasing by an injection shot, as taught by Figliola et al., for the purpose of preventing used cleaning solution from entering and clogging the nozzles between cleaning cycles, thus reducing associated maintenance costs.

With respect to claim 10, the combination of Shimohatsubo et al., Kersch et al., and Figliola et al. references, as applied to claim 8, teaches **a system characterized in that each cleaning nozzle is spring biased towards a closed position where it**

covers injection openings in the chamber, and that the pressure in the cleaning liquid overcomes the spring biasing by an injection shot (Figliola et al.: col.4, lines 8-13: disclosing valve operation relative to any water supply pressure)**.**

With respect to claim 11, the combination of Shimohatsubo et al., Kersch et al., and Figliola et al. references, as applied to claim 8, teaches **a system characterized in that the hydrophore is tubular and formed in a support profile for the doctor blade** (Fig.2: 26) **or in a section of the wall of the doctor blade in order to have short connecting lines/tubes between the hydrophore and the cleaning nozzles** (Fig.2; 21)**.**

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimohatsubo et al. (US 6,024,016), Kersch et al. (US 6,755,130), and Steenbergen (US 6,602,566), as applied to claim 5 above, and in further view of Figliola et al. (US 3,662,781).

With respect to claim 7, the combination of Shimohatsubo et al., Kersch et al., and Steenberger references teaches all the limitations of claim 5 above. However, the combination of Shimohatsubo et al., Kersch et al., and Steenberger references does not teach **a method characterized in that each cleaning nozzle is adapted to open at a pressure between 2 and 12 bar, preferably between 4 and 8 bar.**

Figliola et al. teaches **a method characterized in that each cleaning nozzle is adapted to open at a pressure between 2 and 12 bar, preferably between 4 and 8 bar** col.4, lines 8-13: disclosing valve adjustment relative to any water supply pressure**).**

It would have been obvious to one of ordinary skill in the art at the time of this invention to modify the combination of Shimohatsubo et al., Kersch et al., and Steenberger references to provide **a method characterized in that each cleaning nozzle is adapted to open at a pressure between 2 and 12 bar, preferably between 4 and 8 bar**, as taught by Figliola et al., for the purpose of preventing used cleaning solution from entering and clogging the nozzles between cleaning cycles, thus reducing associated maintenance costs.

7. Claims 13 - 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimohatsubo et al. (US 6,024,016) and Kersch et al. (US 6,755,130) in view of Mayer et al. (US 6,964,792).

With respect to claim 13, the combination of Shimohatsubo et al. and Kersch et al. references teaches **a cleaning nozzle** (Shimohatsubo et al.: Fig.2; 21) **for use in a chamber** (Fig.3; col.3, lines 49-52) **in a doctor blade** (Fig.2: 26)**, where pressurized cleaning liquid** (col.4, lines 52-53) **is injected into the chamber through at least one such nozzle** (Fig.2: 21)**.**

However, the combination of Shimohatsubo et al. and Kersch et al. references does not teach a **nozzle characterized in that it includes a largely mushroom-**

shaped nozzle body with a stem intended for mounting in the wall of the chamber, and which has a domed top of an elastic material, and furthermore that the nozzle also includes a second nozzle body in the form of a bushing for disposition in an opening in the chamber wall and with a central boring for accommodating the stem of the nozzle body and with through-going openings disposed thereabout, the openings covered by the domed top.

Mayer et al. teaches a **nozzle** (Fig.2A) **characterized in that it includes a largely mushroom-shaped nozzle body with a stem** (Fig.2A: 211) **intended for mounting in the wall** (Fig.2A: 203) **of the chamber** (col.7, lines 25-28)**, and which has a domed top of an elastic material** (Fig.2A: 221)**, and furthermore that the nozzle also includes a second nozzle body** (Fig.2A: 217) **in the form of a bushing** (Fig.2A: 203) **for disposition in an opening in the chamber wall** (Fig.2A: 223, 225) **and with a central boring** (Fig.2A: 203) **for accommodating the stem of the nozzle body and with through-going openings disposed thereabout** (Fig.2A: 219)**, the openings covered by the domed top** (Fig.2A: 221)**.**

It would have been obvious to one of ordinary skill in the art at the time that this invention was made to modify the combination of Shimohatsubo et al. and Kersch et al. references to provide a nozzle characterized in that it includes a largely mushroom-shaped nozzle body with a stem intended for mounting in the wall of the chamber, and which has a domed top of an elastic material, and furthermore that the nozzle also includes a second nozzle body in the form of a bushing for disposition in an opening in the chamber wall and with a central boring for accommodating the stem of the nozzle

body and with through-going openings disposed thereabout, the openings covered by the domed top, as taught by Mayer et al., for the purpose of pressure regulation of fluid and uniform flow, thus avoiding particulates suspended in fluid.

With respect to claim 14, the combination of Shimohatsubo et al., Kersch et al., and Mayer et al. references, as applied to claim 13 above, teaches a **cleaning nozzle** (Shimohatsubo et al.: Fig.2; 21)**, characterized in that the domed top** (Mayer et al: Fig.2A: 221) **is intended for covering injection openings in the chamber** (Fig.2A; 219) **and designed with a radial inner and outer surface which is largely perpendicular** (Fig.2A) **to the stem** (Fig.2A: 211) **and which is intended for contact with the chamber wall** (Fig.2A: 203) **at the mounting of the nozzle** (Fig.2A: 219) **in an opening in the wall, and that the radially outer surface is arranged to extend in unloaded condition to a position further down over the stem than the position of the inner surface** (Fig.2A: 217)**.**

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimohatsubo et al. (US 6,024,016), Kersch et al. (US 6,755,130), and Mayer et al. (US 6,964,792) references, as applied to claim 13 above, and further in view of Figliola et al. (US 3,662,781).

With respect to claim 15, the combination of Shimohatsubo et al., Kersch et al., and Mayer et al. references teaches all the limitations of claim 13 above. However, the

combination of Shimohatsubo et al., Kersch et al., and Mayer et al. references does not teach a **cleaning nozzle characterized in that the stem is provided with screw thread and adapted to be fastened by screwing into an opening in the chamber wall, and that the domed top has a notch for engaging a tool.**

Figliola et al. teaches a **cleaning nozzle characterized in that the stem is provided with screw thread** (Fig.3: 27; col.4, lines 17-20; 43-44) **and adapted to be fastened by screwing into an opening in the chamber wall** (col.7, lines 41-43)**, and that the domed top has a notch for engaging a tool** (Fig.6: 33a; col.4, lines 45-49)**.**

With respect to claim 16, the combination of Shimohatsubo et al., Kersch et al., and Mayer et al. references, as applied to claim 13, teaches **a cleaning nozzle characterized in that it is made of plastic, preferably PVDF** (Figliola et al., col.4, lines 17-20)**.**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. WITKOWSKI whose telephone number is (571)270-3795. The examiner can normally be reached on Monday - Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Nguyen can be reached on 571-272-1753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACW

/Taghi T. Arani/

Supervisory Patent Examiner, Art Unit 4193

4/1/4/2008